

# Package ‘tframePlus’

May 2, 2012

**Version** 2012.4-2

**Title** Time Frame coding kernel extensions

**Description** Extensions and additional tframe utilities.

**Depends** R (>= 2.5.0), tframe

**Imports** methods, timeSeries

**Suggests** tfplot, zoo, xts, its, tis, timeSeries, methods, WriteXLS(>= 1.7.0)

**LazyLoad** yes

**License** GPL-2

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**URL** <http://tsanalysis.r-forge.r-project.org/>

**Repository** CRAN

**Repository/R-Forge/Project** tsanalysis

**Repository/R-Forge/Revision** 108

**Date/Publication** 2012-05-02 06:39:34

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as.quarterly                      *Aggregate Time Series*

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### Description

Convert series to quarterly or annual.

### Usage

```
as.quarterly(x, FUN=sum, na.rm=FALSE, ...)  
as.annually(x, FUN=sum, na.rm=FALSE, ...)  
as.weekly(x, FUN=sum, na.rm=FALSE, foldFrom=end(x), periodicity = 7)
```

### Arguments

x	a tframed object. (Only montly is currently working)
FUN	the function to use for aggregating.
na.rm	Logical indicating if NA should be removed from the beginning and end of a series
foldFrom	a date which is used to determine the end of weeks.
periodicity	the number of periods in a week.
...	additional arguments passed to aggregate

### Details

Functions `as.quarterly` and `as.annually` uses `aggregate`, but shifts the data to match usual economic and financial quarters or years (whereas `aggregate` simply groups together a number of periods corresponding to the new frequency starting with the first observation). These functions should give the same result as `aggregate` if the data starts and ends on quarter (annual) boundaries. If the data does not start and end on quarter (annual) boundaries then NA will be put in where data is incomplete, and the quarter (year) removed if `na.rm=TRUE`.

Monthly to annual gives the aggregate by converting first to quarterly, which is not exactly correct.

To weekly by periodicity groupings from `foldFrom`. Partial weeks in the beginning or end are padded with NA and dropped if `na.rm=FALSE`. (`as.weekly` has been tested only with daily 7 day weeks.)

### Value

time series

### See Also

[tfwindow aggregate](#)

**Examples**

```
z <- ts(1:10, start = c(1999,2), frequency=4)
as.annually(z)
as.annually(z, na.rm=TRUE)

z <- ts(1:30, start = c(1999,2), frequency=12)
as.annually(z)
as.annually(z, na.rm=TRUE)
as.quarterly(z)
as.quarterly(z, na.rm=TRUE)
```

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changeTSrepresentation

*Change the class of a (Multivariate) Time Series*

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**Description**

Change the class of a (Multivariate) Time Series

**Usage**

```
changeTSrepresentation (x, newRepresentation)
```

**Arguments**

**x** a multivariate time series object.  
**newRepresentation** function or character string indicating the function to use to change the time series class.

**Details**

This function attempts to convert the time series to the new class using `newRepresentation`.

If the representation is a character string then it is applied using `do.call(TSrepresentation, list(x, dates))` where `x` is the time series (matrix) to be return and `dates` are determined by `as.Date(time(x))` where `x` is the default representation of the data. If representation is not a character string then it should be a function and is applied using `TSrepresentation(x, dates)`

**Value**

a multivariate time series object.

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rollAggregate	<i>Rolling Time Series Aggregate</i>
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**Description**

Aggregate time series using a rolling window.

**Usage**

```
rollAggregate(x, FUN=sum, na.rm=FALSE, aggPeriods=4, ...)
```

**Arguments**

<code>x</code>	a time series object.
<code>FUN</code>	the function to use for aggregating.
<code>na.rm</code>	Logical indicating if NA should be removed from the beginning and end of a series
<code>aggPeriods</code>	the number of observations to use in the rolling window.
<code>...</code>	additional arguments passed to <code>apply</code>

**Details**

Functions `rollAggregate` uses `apply` with `FUN` on a rolling window set by `aggPeriods`. Partial windows may result in NA, depending on `FUN`. NA in the beginning or end are dropped if `na.rm=TRUE`. The frequency of the resulting series remains the same as the original, but the result will be `aggPeriods` shorter (i.e. have NAs). The default will be a four period moving sum (which roughly converts weekly data to something approximating monthly, but at a weekly frequency).

**Value**

time series

**See Also**

[as.annually](#), [as.quarterly](#), [as.weekly](#), [apply](#)

**Examples**

```
rollAggregate(ts(1:20, start = c(1999,1), frequency=1))
rollAggregate(ts(1:20, start = c(1999,1), frequency=12), aggPeriods=3)

if(require("zoo")) {
  z <- zoo(rnorm(100), order.by = Sys.Date() + 1:100)
  rollAggregate(as.weekly(z), aggPeriods=4, FUN=mean)
  require("tfplot")
  tfplot(as.weekly(z), rollAggregate(as.weekly(z), aggPeriods=4,
    FUN=mean, na.rm=TRUE))
  tfplot(z, rollAggregate(z, aggPeriods=28, FUN=mean))
}
```

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tfI	<i>Integrate Multivariate Time Series</i>
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**Description**

Integrate multivariate time series using cumsum

**Usage**

```
tfI (x, I=rep(TRUE, NCOL(x)), t0=rep(0, NCOL(x)))
```

**Arguments**

x	a multivariate time series object.
I	a logical of length equal the number of series in x indicating which series to integrate, default all.
t0	a vector of length equal the number of series in x indicating initial (time zero) values, defaults to zero.

**Details**

This function first prepends t0 to x and then applies cumsum to each series indicated by I. The first value is then dropped from the result.

**Value**

a multivariate time series object of the same dimension as x.

**See Also**

[tfL tfwindow aggregate cumsum as. quarterly](#)

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tfpersp	<i>Plot Series With persp</i>
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**Description**

Plot series with persp

**Usage**

```
tfpersp (x, tf=tfspan(x), start=tfstart(tf), end=tfend(tf),
  theta = -30, phi = 15, scale = FALSE,
  xlab = "Time", ylab = "", zlab = "",
  aspect= c(0.5, 0.5), #y/time, z/time,
  ticktype="detailed", ltheta = -120, lphi = 15,
  ...)
```

**Arguments**

x	multivariate time series (a tframed object).
tf	a tframe to set the start and end of the plot.
start	start period for the plot.
end	end period for the plot.
theta	argument passed to persp
phi	argument passed to persp
scale	argument passed to persp
xlab	argument passed to persp
ylab	argument passed to persp
zlab	argument passed to persp
aspect	argument passed to persp
ticktype	argument passed to persp
ltheta	argument passed to persp
lphi	argument passed to persp
...	additional arguments passed to persp

**Details**

This function uses passes a multivariate time series to persp.

**Value**

Depends

**See Also**

[tfwindow persp](#)

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TWriteXLS

*Write Time Series to an .xls Spreadsheet File*

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**Description**

Write one or more time series to a .xls spreadsheet file

**Usage**

```
TWriteXLS(x, ..., FileName="R.xls", SheetNames=NULL,  
          dateHeader="date", verbose = FALSE)  
TWriteCSV(x, FileName="R.csv", dateFormat=1, dateHeader="date")
```

**Arguments**

x	a time series or matrix of time series.)
...	additional time series objects (like x).
FileName	a string to use for the file name.
SheetNames	Logical indicating if NA should be removed from the beginning and end of a series.
dateFormat	an integer indicating the format to use for dates. (See details.)
dateHeader	string or vector of strings to use as header on date column.
verbose	logical passed to WriteXLS.

**Details**

This functions uses WriteXLS to write time series data to an .xls spreadsheet file. If the object x has multiple series then they will be put on the same sheet. Additional objects in ... will be put on additional pages.

The first line of each sheet will have column headers using seriesNames from the series in the column. The first column will have dates and the heading for that column will be determined by dateHeader. This can be a vector of length equal the number of sheets, of a single character string, in which case it is replicated for each sheet. The dateHeader is a might be useful for indication information like the date of the last observation in a known place on the sheet (A1) for indicating on a graph. For convenience, the year, period, and a character representation of the period are indicated in columns 2 to 4. This is followed by columns of the data.

If SheetNames is NULL (the default) then the sheet names will be generated from the first series name in each object. If SheetNames is supplied then it should have an element for x and for each object in ....

If WriteXLS does not find a version of perl with appropriate modules then a work around is attempted using save.

WriteCSV handles only a single object x which can have multiple series. These are written as columns in the comma separated value file. dateFormat can be 0 indicating no date, 1 indicating a format like "Jan 1969", 2 indicating a format like 1969,1, or 3 indicating a format like 1969,"Jan",. Only 0 or 1 are supported for data other than monthly and quarterly frequencies.

**Value**

logical

**See Also**

[WriteXLS](#)

**Examples**

```
tofile <- tempfile()

z <- ts(1:10, start=c(1999,2), freq=12)
seriesNames(z) <- "ser 1"
```

```
TWriteXLS(z, FileName=tofile)

zz <- tbind(z, diff(z))
seriesNames(zz) <- c("ser 1", "diff")
TWriteXLS(zz, FileName=tofile, SheetNames="2 series")

zz <- ts(1:10, start=c(1999,1), freq=1)
seriesNames(zz) <- "annual ser"
TWriteXLS(z, zz, FileName=tofile, SheetNames=c("monthly", "annual"))

unlink(tofile)
```

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